IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellants:	Rajendra R. Damle; Young Lee; William C. Szeto; Robert K. Butler; H. Michael Zadikian		
Assignee:	Ceterus Networks, Inc.		
Title:	TRANSPORT OF HIGH-BANDWIDTH DATASTREAMS OVER A NETWORK		
Application No.:	10/074,264	Filing Date:	February 12, 2002
Examiner:	Ashokkumar B. Patel	Group Art Unit:	2154
Docket No.:	CET0006US	Confirmation No.:	5023

Austin, Texas
September 8, 2008

Mail Stop: Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPEAL BRIEF

Dear Sir:

This brief is submitted in support of the Notice of Appeal filed on September 8, 2008 by the Appellants to the Board of Patent Appeals and Interferences from the Examiner's final rejection of claims 1-11, 13-22 and 24-37. The appellant notes that the appeal filed September 8, 2008 was received by the USPTO, thereby giving the appellant a period for filing set to expire on November 8, 2008.

Please charge deposit account No. 502306 for the fee of $510.00 associated with this Appeal Brief. Please charge this deposit account for any additional sums which may be required to be paid as part of this appeal.

REAL PARTY IN INTEREST

The real party in interest on this appeal is the assignee, Ceterus Networks, Inc. as named in the caption above.

RELATED APPEALS AND INTERFERENCES

There are no appeals or interferences related to this application.

STATUS OF CLAIMS

Claims 1-11, 13-22 and 24-37 are pending in the application.

Claims 1-11, 13-22 and 24-37 stand rejected.

Appellant appeals the rejection of Claims 1-11, 13-22 and 24-37.

STATUS OF AMENDMENTS

No amendments were filed subsequent to the Final Rejection of April 11, 2008

SUMMARY OF CLAIMED SUBJECT MATTER

Independent Claim 1 sets forth a method for transporting information over a network. As is illustrated, *e.g.*, at Figure 8, reference number 810 and described *e.g.*, at page 17, line 1 of the present application, the method includes decomposing an input datastream of a plurality of input datastreams into a plurality of sub-streams. As is illustrated, *e.g.*, at page 18, Figure 15 of the appendix of incorporated U.S. Provisional Application #60/270,444 and described *e.g.*, at page 17, line 12 of the present application, the decomposing comprises placing a portion of the input datastream into one of a plurality of queues. As is illustrated and described, *e.g.*, at page 8, Figure 8 of the appendix of incorporated U.S. Provisional Application #60/270,444, the decomposing further comprises forming the portion of the input datastream using one or more payload data units (PDUs) each comprising a predetermined amount of data. As is described, *e.g.*, at page 19, lines 3-15 of the appendix of incorporated U.S. Provisional Application #60/270,444, the decomposing further comprises forming each PDU by selecting the

predetermined amount of data from the input datastream. As is illustrated and described, *e.g.*, at page 16, Figure 14 of the appendix of incorporated U.S. Provisional Application #60/270,444, the decomposing further comprises appending to each PDU a source identifier identifying the source of the input datastream.

As is described, *e.g.*, at page 19, lines 1-5 of the appendix of incorporated U.S. Provisional Application #60/270,444, each queue of the plurality of queues corresponds to a corresponding channel of a plurality of channels. As is illustrated, *e.g.*, at Figure 8, reference number 820 and described *e.g.*, at page 17, line 19 of the present application, the method further comprises communicating said sub-streams between a first network element and a second network element of said network by transporting each one of said sub-streams over the corresponding channel. As is described *e.g.*, at page 14, line 30 of the present application, a transmission rate of said input datastream is greater than a maximum transmission rate of any one of said channels. As is illustrated, *e.g.*, at page 16, Figure 14 of the appendix of incorporated U.S. Provisional Application #60/270,444, the communicating comprises forming a data frame comprising one or more PDUs and the appended source identifier for each PDU. As is illustrated, *e.g.*, at Figure 8, reference number 820 and described *e.g.*, at page 17, line 20 of the present application, the communicating further comprises transmitting the data frame over the corresponding channel.

Independent Claim 13 sets forth a method for receiving information transported over a network. As is illustrated, *e.g.*, at Figure 5, reference number 118 and described *e.g.*, at page 13, lines 9-13 of the present application, the method includes receiving a plurality of sub-streams. As is illustrated, *e.g.*, at Figure 8, reference number 810 and described *e.g.*, at page 17, line 1 of the present application, the sub-streams are created by decomposing an input datastream of a plurality of input datastreams into the sub-streams. As is illustrated, *e.g.*, at page 18, Figure 15 of the appendix of incorporated U.S. Provisional Application #60/270,444 and described *e.g.*, at page 17, line 12 of the present application the decomposing comprises placing a portion of the input datastream into one of a plurality of queues. As is illustrated and described, *e.g.*, at page 8, Figure 8 of the appendix of incorporated U.S. Provisional Application #60/270,444, the decomposing further comprises forming the portion of the input datastream using one or more payload

data units (PDUs) each comprising a predetermined amount of data. As is described, *e.g.*, at page 19, lines 3-15 of the appendix of incorporated U.S. Provisional Application #60/270,444, the decomposing further comprises forming each PDU by selecting the predetermined amount of data from the input datastream. As is illustrated and described, *e.g.*, at page 16, Figure 14 of the appendix of incorporated U.S. Provisional Application #60/270,444, the decomposing further comprises appending to each PDU a source identifier identifying source of the input datastream.

As is described, *e.g.*, at page 19, lines 1-5 of the appendix of incorporated U.S. Provisional Application #60/270,444, each queue of the plurality of queues corresponds to a corresponding channel of a plurality of channels. As is illustrated, *e.g.*, at Figure 8, reference number 820 and described *e.g.*, at page 17, line 19 of the present application, each of said sub-streams is transported over said network on the corresponding channel. As is illustrated, *e.g.*, at page 16, Figure 14 of the appendix of incorporated U.S. Provisional Application #60/270,444, transporting comprises forming a data frame comprising one or more PDUs and the appended source identifier for each PDU and transmitting the data frame over the corresponding channel. As is described *e.g.*, at page 14, line 30 of the present application, a transmission rate of said input datastream is greater than a maximum transmission rate of any one of said channels. As is illustrated, *e.g.*, at Figure 8, reference number 830 and described *e.g.*, at page 17, line 21-24 of the present application, the method includes assembling said sub-streams into a reconstructed output datastream.

Independent claim 24 sets forth an apparatus for transporting information over a network. As is illustrated, *e.g.*, at Figure 5, reference number 530 and described *e.g.*, at page 12, lines 23-24 of the present application, the apparatus comprises a first sub-stream management device comprising an input configured to receive an input datastream of a plurality of input datastreams. As is illustrated, *e.g.*, at Figure 5, reference number 530 and described *e.g.*, at page 12, lines 25-26 of the present application, the substream management device further comprises a plurality of outputs, wherein each of said outputs is configured to output one of a plurality of sub-streams, wherein the input datastream is decomposed to form the plurality of sub-streams. As is illustrated, *e.g.*, at page 18, Figure 15 of the appendix of incorporated U.S. Provisional Application #60/270,444 and

described *e.g.*, at page 17, line 12 of the present application, the decomposing comprises placing a portion of the input datastream into one of the plurality of queues. As is illustrated and described, *e.g.*, at page 8, Figure 8 of the appendix of incorporated U.S. Provisional Application #60/270,444, the decomposing further comprises forming the portion of the input datastream using one or more payload data units (PDUs) each comprising a predetermined amount of data. As is described, *e.g.*, at page 19, lines 3-15 of the appendix of incorporated U.S. Provisional Application #60/270,444, the decomposing further comprises forming each PDU by selecting the predetermined amount of data from the input datastream. As is illustrated and described, *e.g.*, at page 16, Figure 14 of the appendix of incorporated U.S. Provisional Application #60/270,444, the decomposing further comprises appending to each PDU a source identifier identifying the source of the input datastream.

As is described, *e.g.*, at page 19, lines 1-5 of the appendix of incorporated U.S. Provisional Application #60/270,444, each of the plurality of queues corresponds to a corresponding channel of a plurality of channels. As is illustrated, *e.g.*, at Figure 8, reference number 820 and described *e.g.*, at page 17, line 19 of the present application, each of said sub-streams is transported over said network on the corresponding channel. As is illustrated, *e.g.*, at page 16, Figure 14 of the appendix of incorporated U.S. Provisional Application #60/270,444, the transporting comprises forming a data frame comprising one or more PDUs and the appended source identifier for each PDU and transmitting the data frame over the corresponding channel. As is described *e.g.*, at page 14, line 30 of the present application, a transmission rate of said input datastream is greater than a maxiumum transmission rate of any one of said channels.

Independent claim 30 sets forth an apparatus for transporting information over a network. As is illustrated, *e.g.*, at Figure 5, reference number 540 and described *e.g.*, at page 12, lines 28-30 of the present application, the apparatus comprises a first sub-stream management device, comprising an output configured to output a reconstructed output datastream, and a plurality of inputs, wherein each of said inputs is configured to receive one of a plurality of sub-streams. As is illustrated, *e.g.*, at Figure 8, reference number 810 and described *e.g.*, at page 17, line 1 of the present application, the sub-streams are

created by decomposing an input datastream of a plurality of input datastreams into said sub-streams. As is illustrated, *e.g.*, at page 18, Figure 15 of the appendix of incorporated U.S. Provisional Application #60/270,444 and described *e.g.*, at page 17, line 12 of the present application, the decomposing comprises placing a portion of the input datastream into one of a plurality of queues. As is illustrated and described, *e.g.*, at page 8, Figure 8 of the appendix of incorporated U.S. Provisional Application #60/270,444, the decomposing further comprises forming the portion of the input datastream using one or more payload data units (PDUs) each comprising a predetermined amount of data. . As is described, *e.g.*, at page 19, lines 3-15 of the appendix of incorporated U.S. Provisional Application #60/270,444, the decomposing further comprises forming each PDU by selecting the predetermined amount of data from the input datastream. As is illustrated and described, *e.g.*, at page 16, Figure 14 of the appendix of incorporated U.S. Provisional Application #60/270,444, the decomposing further comprises appending to each PDU a source identifier identifying the source of the input datastream.

As is described, *e.g.*, at page 19, lines 1-5 of the appendix of incorporated U.S. Provisional Application #60/270,444, each queue of the plurality of queues corresponds to a corresponding channel of a plurality of channels. As is illustrated, *e.g.*, at Figure 8, reference number 820 and described *e.g.*, at page 17, line 19 of the present application, each of said sub-streams is transported over said network on the corresponding channels. As is illustrated and described, *e.g.*, at page 16, Figure 14 of the appendix of incorporated U.S. Provisional Application #60/270,444, the transporting comprises forming a data frame comprising one or more PDUs and the appended source identifier for each PDU and transmitting the data frame over the corresponding channel. As is described *e.g.*, at page 14, line 30 of the present application, a transmission rate of said input datastream is greater than a maximum transmission rate of any one of said channels.

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

I. Rejection of Claims 1-11, 13-22 and 24-37 under 35 U.S.C. §103(a) as being unpatentable over United States Patent No. 5,680,400 to York (*York*) in view of United States Patent No. 5,680,400 to Smith *et al.* (*Smith*).

II. Rejection of Claims 1, 13, 24 and 30 under 35 U.S.C. §102(e) as being anticipated by *Smith.*

ARGUMENT

I. The rejection of Claims 1-11, 13-22 and 24-37 under 35 U.S.C. §103(a) as being unpatentable over *York* in view of *Smith* is unfounded and should be overturned.

Claims 1-11, 13-22 and 24-37 stand rejected under 35 U.S.C. §103(a) as purportedly being unpatentable over U.S. Patent No. 5,680,400 issued to York ("*York*") in view of U.S. Patent No. 7,149,432 issued to Smith *et al.* ("*Smith*"). Appellants respectfully submit that this rejection is in clear error and should be overturned.

In order for a claim to be rendered invalid under 35 U.S.C. §103, the subject matter of the claim as a whole would have to be obvious to a person of ordinary skill in the art at the time the invention was made. *See* 35 U.S.C. §103(a). This requires: (1) the reference(s) must teach or suggest all of the claim limitations; (2) there must be some teaching, suggestion or motivation to combine references either in the references themselves or in the knowledge of the art; and (3) there must be a reasonable expectation of success. *See* MPEP 2143; MPEP 2143.03; *In re Rouffet*, 149 F.3d 1350, 1355-56 (Fed. Cir. 1998).

Independent Claims 1, 13, 24 and 30, as amended, each contain limitations of substantially the following form:

> decomposing an input datastream of a plurality of input datastreams into a plurality of sub-streams, wherein …
>
> > appending to each PDU a source identifier identifying the source of the input datastream.

See, *e.g.*, Claim 1. Support for these limitations can be found at least in the provisional patent application entitled "Method and Apparatus for Wavelength Concatenated Channel Framing" (60/270,444) ("the '444 Provisional") which was incorporated by reference by the original Application on pages 14 and 17. *See also* Resp. to Non-Final Office Action, p.11 ("Formal Remarks")(January 15, 2007). The Appendix accompanying the '444 Provisional describes the use and formation of PDUs, source identifiers for PDUs (*e.g.*, Q_IDs) and data frames comprising PDUs. *See*, *e.g.*, '444 Provisional, Appendix pp.16-19. Appellants respectfully submit that neither *York* nor *Smith*, alone or in combination, provides disclosure of all of these limitations.

The Final Office Action admits that *York* fails to provide disclosure of "decomposing an input datastream of a plurality of input datastreams, associating with each PDU a source identifier identifying the source of the input datastream." *See* Final Office Action, p.15. In order to remedy this admitted deficiency in the disclosure of York, the Final Office Action relies upon *Smith*. *See* Final Office Action, p.16. Appellants submit that *Smith* fails to provide disclosure of the claimed appending a source identifier to each PDU.

Smith purports to disclose "a method and apparatus for optical equalization to improve signal reach by distributing two or more data signals across two or more channels of an optical link." *Smith* 4:49-52. *Smith* purports to accomplish this goal by

distributing each of M data signals among N transport channels by dividing each of the M data signals into N sub-streams. *See* Smith 5:33-47. For each transport channel, the sub-streams from each of the originating data signals are purportedly interleaved into serial-composite datastream that is transmitted on the transport channel. *See Smith* 5:48-50, 6:15-33.

In order to identify the originating datastream for each of the sub-streams that are interleaved, *Smith* purportedly utilizes a sub-stream processor that "operates to insert a unique sub-stream identifier into each of the sub-streams 22 received by the interleaver 20, prior to their being interleaved into a respective channel 16." *Smith* 5:50-54. *Smith* states that "the sub-stream identifier preferably comprises a unique, n-bit word, which is inserted into a respective sub-stream 22 at a predetermined frequency." *Smith* 5:56-59; *see also Smith* 6:4-6 ("In general, an insertion frequency of about 8 kHz should yield satisfactory results in most cases."). Thus, *Smith* discloses <u>inserting</u> the disclosed sub-stream identifier into the sub-stream as a separate unit and teaches away from <u>appending</u> a sub-stream identifier to each PDU, as claimed. In fact, *Smith* discloses inserting a substream identifier into the substream without regard for individual PDUs.

The Final Office Action appears to correlate *Smith*'s "divid[ing] each data signal 14 into a sequential series of data units 24 of a predetermined length" (*Smith* 5:36-38) with the claimed payload data units. *See* Final Office Action, p.7. But *Smith* is clear that the *Smith*'s sub-stream identifier is inserted into the sub-stream created by these sequential series of data units and is not appended to each of *Smith*'s data units. *See Smith* 5:50-6:6.

In response to the above discussion, the Final Office Action states:

> **Examiner notes that the source identifier for PDUs is nothing but "Q-IDs."** Which is illustrated on page 19 of 60/270,444 as follows:
>
> ...
>
> Also Smith teaches at col. 6. line 55-col. 7, line 21, "The signal distribution process described above with respect to FIG. 2 is fully reversible to recover the original data signals 14. FIG. 3 is a block diagram of a signal recovery unit 28, which is implemented in each receiving end node 4a e. The signal recovery unit 28 shown in FIG. 3 can be implemented in hardware and/or software downstream of conventional optical demultiplexing and opto/electrical conversion circuits, which operate to optically demultiplex the channels 16a d from a fiber link 6, and convert each composite data stream 26a d into electronic form for processing. Conventional clock recovery and signal regeneration circuits (not shown) may also be implemented upstream of the signal recovery circuit 28 shown in FIG. 3.
>
> The signal recovery unit 28 generally includes at least N parallel elastic buffers 30a d, each of which is arranged to receive a respective composited data-stream 26 from one of the channels 16. The elastic buffers 30a d cooperate to de-skew the composite data streams 26a d, and thus compensate for propagation delay differences between each of the channels. Each of the de-skewed composite data-signals 26a d is then passed to a respective framer 32 and demultiplexor 34. **The framer 32 analyses the respective composite data-stream 26 to detect the sub-stream identifiers of each of the sub-streams 22 contained in the composite data-stream 26,** and generates a synchronization signal which is used to control the operation of the respective demultplexor 34. Using the synchronization signal, in combination with the known interleaving sequence of the interleavors 20a d, each demultiplexor 30a d operates to demultiplex its respective composite data-stream 25, to recover one sub-stream 22 of each data signal 14. The sub-streams 22 of each data signal 14 are forwarded (one from each demultiplexor 30) to a one of M multiplexors 30a c which multiplex the substreams 22 to recover the respective data signals 14.
>
> **Thus as identified in the previous Office Action, Smith teaches to "detect the sub-stream identifiers of each of the sub-streams 22 contained in the composited data-stream 26", as such identified by Smith as shown in Figs 2 and 3, S1 is an input stream identifier which is a source identifier and U1 is packet identifier which is a source identifier and U1 is packet identifier which is appended to the PDUs. This is exactly what the Applicant has indicated, which is the source identifier for PDUs is nothing but "Q-IDs."**

See, Final Office Action, pages 3-7 (**emphasis** in original). Appellants respectfully submit that neither the cited passage, nor, more broadly, the combination of *Smith* and *York*, teaches an atomic unit of data, such as a claimed PDU, which contains both a source identifier **and** payload data. Appellants claim "appending to each PDU a source identifier identifying the source of the input datastream." *Smith* teaches away from the individually source-identifiable atomic data unit claimed by Appellants. Instead, *Smith* purports to teach a source identifier injected at a low frequency interval into a substream of otherwise unidentifiable packets, wherein the atomic unit (*e.g.*, packet) does not carry any source identifier. Metaphorically, it is as though Appellants claimed a data container (the PDU) with a label indicating its source. Following the metaphor, *Smith*, if it teaches anything, teaches away from individually source-identified data containers as it purports to teach a line of data containers (packets) without source identifiers on the individual data containers, wherein one of the data containers is used to indicate a source of its anonymous brothers within the stream.

For at least these reasons, Appellants submit that neither *York* nor *Smith*, alone or in combination, provide disclosure of the pending limitations of independent Claims 1, 13, 24 and 30, and all claims depending therefrom. Appellants respectfully submit that the Examiner has failed to satisfy the Examiner's burden to establish the disclosure of all the limitations of the claims in the asserted references.

In addition, Appellants submit that a person of ordinary skill in the art would not be motivated to combine *York* with *Smith* because such a combination would not be successful. *York* is designed to purportedly transport one input datastream over a plurality of transmission links. In order to do so, *York* relies upon a preset ordering of transmitter queues that is transmitted to the receiver in order to facilitate reassembling the

datastream. No identification of the transmitted packets is made or necessary. Instead, the reassembly is performed on a queue by queue basis (or transmit line by transmit line basis). *See York* 4:6-17, 4:35-41, 6:19-24. *York* does not contemplate multiple input datastreams, nor can *York* handle multiple input datastreams. In fact, were one to put multiple input datastreams into the *York* device, the output at the receiving end would be a meaningless jumble because *York* provides no mechanism for identifying input datastreams. *Smith* cannot remedy this deficiency, because of the differing purpose for which *Smith* is designed.

Further, one would not be motivated to combine *Smith* with *York* because *York* does not provide disclosure that would enhance the performance of *Smith*. *Smith* provides a mechanism for purportedly dealing with multiple input datastreams, splitting the datastreams, transmitting a number of transmission datastreams, and then reassembling the original datastreams from the transmission datastreams. Thus, combining the teachings of *York* with *Smith* would be at best redundant. In addition, *Smith* provides transmission of the transmission datastreams using a serial-composite datastream. The Final Office Action has failed to provide a basis for any benefit that one would derive from coupling the packetized system of *York* to *Smith*.

The Final Office Action responds to this discussion at page 3 by stating:

> Because York and Smith teaches decomposing input datastreams, one incorporating the invention for "decomposing an input datastream" and the other incorporating the invention for "decomposing the plurality of input datastreams."
>
> The difference of the invention lays into the inventive component they use, "Data Splitter" of York and "The signal distributor unit" of Smith. Therefore, it would have been obvious to one skilled in the art to substitute one method for the other to achieve the predictable results of decomposing the input datastream when it is just one to decompose or more than one to decompose.

See, Final Office Action, pages 7-8. The Final Office Action states that "it would have been obvious to one skilled in the art to substitute one method for the other to achieve the predictable results of decomposing the input datastream when it is just one to decompose or more than one to decompose." Applicants respectfully submit that "broad conclusive statements about the teaching of multiple references, standing alone, are not 'evidence.'" *See Ruiz v. A.B. Chance Co.*, 234 F.3d 654, 666 (Fed. Cir. 2000). The Final Office Action's argument essentially requires belief, without evidence or supporting logic, that an amalgam of unrelated signaling systems would result in a coherent signal. Appellants respectfully submit that the art does not teach this "predictability" to which the Final Office Action alludes but does not cite. Instead, it teaches two different systems designed to achieve different purposes using different methods, and the Final Office Action offers no teaching to bridge the two.

For at least these reasons, Appellants submit that independent Claims 1, 13, 24 and 30, as amended, and all claims depending therefrom are allowable over the combination of York with Smith. Appellants therefore respectfully request the rejections to these claims be overturned and an indication of the allowability of same be issued.

II. Rejection of Claims 1, 13, 24 and 30 under 35 U.S.C. §102(e) as being anticipated by *Smith* is unfounded and should be overturned.

Claims 1, 13, 24 and 30 stand rejected under 35 U.S.C. §102(e) as purportedly being anticipated by *Smith*. Appellants respectfully submit that this rejection is in clear error and should be overturned.

Independent Claims 1, 13, 24 and 30, as amended, each contain limitations of substantially the following form:

> decomposing an input datastream of a plurality of input datastreams into a plurality of sub-streams, wherein …
>
> > appending to each PDU a source identifier identifying the source of the input datastream.

See, *e.g.*, Claim 1 (amended). Appellants respectfully submit that Smith fails to provide disclosure of all of these limitations.

Smith purports to disclose "a method and apparatus for optical equalization to improve signal reach by distributing two or more data signals across two or more channels of an optical link." *Smith* 4:49-52. *Smith* purports to accomplish this goal by distributing each of M data signals among N transport channels by dividing each of the M data signals into N sub-streams. *See Smith* 5:33-47. For each transport channel, the sub-streams from each of the originating data signals are interleaved into serial-composite datastream that is transmitted on the transport channel. *See Smith* 5:48-50, 6:15-33.

In order to identify the originating datastream for each of the sub-streams that are interleaved, *Smith* purportedly utilizes a sub-stream processor that "operates to insert a unique sub-stream identifier into each of the sub-streams 22 received by the interleaver 20, prior to their being interleaved into a respective channel 16." *Smith* 5:50-54. *Smith* states that "the sub-streamidentifier preferably comprises a unique, n-bit word, which is inserted into a respective sub-stream 22 at a predetermined frequency." *Smith* 5:56-59; *see also Smith* 6:4-6 ("In general, an insertion frequency of about 8 kHz should yield satisfactory results in most cases."). Thus, Smith discloses <u>inserting</u> the disclosed sub-stream identifier into the sub-stream. *Smith* does not disclose <u>appending</u> a sub-stream

identifier to a PDU, as claimed. In fact, *Smith* discloses inserting a substream identifier into the substream without regard for individual PDUs.

As in Part I of this Appeal Brief, the Final Office Action appears to correlate *Smith*'s "divid[ing] each data signal 14 into a sequential series of data units 24 of a predetermined length" (*Smith* 5:36-38) with the claimed payload data units. *See* Final Office Action, p.57. But *Smith* is clear that the *Smith*'s sub-stream identifier is inserted into the sub-stream created by these sequential series of data units and is not appended to each of *Smith*'s data units. *See Smith* 5:50-6:6. In addition, *Smith* fails to provide any disclosure of forming a "data frame comprising one or more PDUs and the appended source identifier for each PDU and transmitting the data frame over the corresponding channel," as claimed. Without such disclosure, *Smith* cannot be said to anticipate the claims.

In response to the above discussion, the Final Office Action states:

> **Examiner notes that the source identifier for PDUs is nothing but "Q-IDs."** Which is illustrated on page 19 of 60/270,444 as follows:
>
> ...
>
> Also Smith teaches at col. 6. line 55-col. 7, line 21, "The signal distribution process described above with respect to FIG. 2 is fully reversible to recover the original data signals 14. FIG. 3 is a block diagram of a signal recovery unit 28, which is implemented in each receiving end node 4a e. The signal recovery unit 28 shown in FIG. 3 can be implemented in hardware and/or software downstream of conventional optical demultiplexing and opto/electrical conversion circuits, which operate to optically demultiplex the channels 16a d from a fiber link 6, and convert each composite data stream 26a d into electronic form for processing. Conventional clock recovery and signal regeneration circuits (not shown) may also be implemented upstream of the signal recovery circuit 28 shown in FIG. 3.
>
> The signal recovery unit 28 generally includes at least N parallel elastic buffers 30 a d, each of which is arranged to receive a respective composited data-stream 26 from one of the channels 16. The elastic buffers 30a d cooperate to de-skew the composite data streams 26a d,

> and thus compensate for propagation delay differences between each of the channels. Each of the de-skewed composite data-signals 26a d is then passed to a respective framer 32 and demultiplexor 34. **The framer 32 analyses the respective composite data-stream 26 to detect the sub-stream identifiers of each of the sub-streams 22 contained in the composite data-stream 26,** and generates a synchronization signal which is used to control the operation of the respective demultplexor 34. Using the synchronization signal, in combination with the known interleaving sequence of the interleavors 20a d, each demultiplexor 30a d operates to demultiplex its respective composite data-stream 25, to recover one sub-stream 22 of each data signal 14. The sub-streams 22 of each data signal 14 are forwarded (one from each demultiplexor 30) to a one of M multiplexors 30a c which multiplex the substreams 22 to recover the respective data signals 14.
>
> **Thus as identified in the previous Office Action, Smith teaches to "detect the sub-stream identifiers of each of the sub-streams 22 contained in the composited data-stream 26", as such identified by Smith as shown in Figs 2 and 3, S1 is an input stream identifier which is a source identifier and U1 is packet identifier which is a source identifier and U1 is packet identifier which is appended to the PDUs. This is exactly what the Applicant has indicated, which is the source identifier for PDUs is nothing but "Q-IDs."**

See, *Final Office Action, pages 8-12* (**emphasis** in original). Appellants respectfully submit that neither the cited passage, nor, more broadly, *Smith*, teaches an atomic unit of data, such as a claimed PDU, which contains both a source identifier **and** payload data. Appeallants claim "appending to each PDU a source identifier identifying the source of the input datastream." *Smith* teaches away from the individually identifiable atomic data unit claimed by Appellants. Instead, *Smith* purports to teach a source identifier injected at a low frequency interval into a substream of otherwise unidentifiable packets, wherein the atomic unit (*e.g.*, packet) does not carry any source identifier. Appellants claimed a data container (the PDU) with a label indicating its source. *Smith*, if it teaches anything, teaches away from individually source-identified data containers as it purports to teach a line of data containers (packets) without source identifiers on the individual data

containers, wherein one of the data containers is used to indicate a source of its anonymous brothers within the stream.

For at least these reasons, Appellants submit that *Smith* fails to provide disclosure of all the limitations of independent Claims 1, 13, 24 and 30, and all claims depending therefrom and that these claims are in condition for allowance. Appellants therefore respectfully request the rejections to these claims be overturned and an indication of the allowability of same be issued.

CONCLUSION

For the above reasons, Appellant respectfully submits that the rejection of pending Claims 1-11, 13-22 and 24-37 is unfounded. Accordingly, Appellant respectfully requests that the Board reverse the rejections of these claims.

Respectfully submitted,

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CLAIM APPENDIX

1. (Previously Presented) A method for transporting information over a network comprising:

decomposing an input datastream of a plurality of input datastreams into a plurality of sub-streams, wherein

said decomposing comprises placing a portion of the input datastream into one of a plurality of queues,

forming the portion of the input datastream using one or more payload data units (PDUs) each comprising a predetermined amount of data,

forming each PDU by selecting the predetermined amount of data from the input datastream,

appending to each PDU a source identifier identifying the source of the input datastream, and

each queue of the plurality of queues corresponds to a corresponding channel of a plurality of channels; and

communicating said sub-streams between a first network element and a second network element of said network by transporting each one of said sub-streams over the corresponding channel, wherein

a transmission rate of said input datastream is greater than a maximum transmission rate of any one of said channels, and

said communicating comprises forming a data frame comprising one or more PDUs and the appended source identifier for each PDU and transmitting the data frame over the corresponding channel.

2. (Original) The method of claim 1, wherein
each of said channels is an optical channel.

3. (Original) The method of claim 2, wherein
each of said optical channels corresponds to a wavelength.

4. (Previously Presented) The method of claim 1, wherein
said each one of said sub-streams has a transmission rate that is equal to or less than a maximum transmission rate of a corresponding one of said channels.

5. (Previously Presented) The method of claim 1, further comprising:
assembling said sub-streams into a reconstructed output datastream.

6. (Previously Presented) The method of claim 5, wherein said assembling comprises:
placing a portion of each of said substreams in a queue, wherein said reconstructed output datastream is output by said queue.

7. (Previously Presented) The method of claim 5, further comprising:
performing protocol processing on said input datastream; and
performing protocol processing on said reconstructed output datastream, wherein said protocol processing is performed using a protocol processor comprising a protocol stack.

8. (Previously Presented) The method of claim 1, further comprising:
performing compression on a one of said sub-streams, wherein
said one of said sub-streams has a transmission rate greater than a maximum transmission rate of the corresponding channel.

9. (Original) The method of claim 1, wherein said network is an existing network.

10. (Previously Presented) The method of claim 1, wherein
said network comprises an underlying network infrastructure, and
the method is performed without alteration of said underlying network infrastructure.

11. (Original) The method of claim 10, wherein said network comprises a fiber-optic system.

12. Canceled

13. (Previously Presented) A method for receiving information transported over a network comprising:

receiving a plurality of sub-streams, wherein

said sub-streams are created by decomposing an input datastream of a plurality of input datastreams into said sub-streams, wherein

said decomposing comprises placing a portion of the input datastream into one of a plurality of queues,

forming the portion of the input datastream using one or more payload data units (PDUs) each comprising a predetermined amount of data,

forming each PDU by selecting the predetermined amount of data from the input datastream,

appending to each PDU a source identifier identifying source of the input datastream, and

each queue of the plurality of queues corresponds to a corresponding channel of a plurality of channels, and

each of said sub-streams is transported over said network on the corresponding channel, wherein

said transporting comprises forming a data frame comprising one or more PDUs and the appended source identifier for each PDU and transmitting the data frame over the corresponding channel, and

a transmission rate of said input datastream is greater than a maximum transmission rate of any one of said channels; and

assembling said sub-streams into a reconstructed output datastream.

14. (Original) The method of claim 13, wherein

each of said channels is an optical channel.

15. (Original) The method of claim 14, wherein
each of said optical channels corresponds to a wavelength.

16. (Previously Presented) The method of claim 13, wherein
said each one of said sub-streams has a transmission rate that is equal to or less than a maximum transmission rate of said corresponding one of said channels.

17. (Original) The method of claim 13, wherein said assembling comprises:
placing a portion of each of said substreams in a queue, wherein said reconstructed datastream is output by said queue.

18. (Previously Presented) The method of claim 13, further comprising:
decomposing said input datastream into said sub-streams; and
transporting said each of said sub-streams over said network on the corresponding channel.

19. (Previously Presented) The method of claim 13, further comprising:
performing protocol processing on said input datastream; and
performing protocol processing on said reconstructed output datastream, wherein said protocol processing is performed using a protocol processor comprising a protocol stack.

20. (Original) The method of claim 13, wherein said network is an existing network.

21. (Previously Presented) The method of claim 13, wherein
said network comprises an underlying network infrastructure, and
the method is performed without alteration of said underlying network infrastructure.

22. (Original) The method of claim 21, wherein said network comprises a fiber-optic system.

23. Canceled

24. (Previously Presented) An apparatus for transporting information over a network comprising:

a first sub-stream management device, comprising

an input configured to receive an input datastream of a plurality of input datastreams, and

a plurality of outputs, wherein

each of said outputs is configured to output one of a plurality of sub-streams, wherein

the input datastream is decomposed to form the plurality of sub-streams, wherein

said decomposing comprises placing a portion of the input datastream into one of the plurality of queues,

forming the portion of the input datastream using one or more payload data units (PDUs) each comprising a predetermined amount of data,

forming each PDU by selecting the predetermined amount of data from the input datastream,

appending to each PDU a source identifier identifying the source of the input datastream, and

each of the plurality of queues corresponds to a corresponding channel of a plurality of channels,

each of said sub-streams is transported over said network on the corresponding channel, wherein

said transporting comprises forming a data frame comprising one or more PDUs and the appended source identifier for each PDU and transmitting the data frame over the corresponding channel , and

a transmission rate of said input datastream is greater than a maxiumum transmission rate of any one of said channels.

25. (Original) The apparatus of claim 24, wherein
each of said channels is an optical channel.

26. (Previously Presented) The apparatus of claim 25, wherein
each of said optical channels corresponds to a wavelength.

27. (Previously Presented) The apparatus of claim 24, wherein
said each one of said sub-streams has a transmission rate that is equal to or less than a maximum transmission rate of said corresponding one of said channels.

28. (Previously Presented) The apparatus of claim 24, further comprising
a second sub-stream management device, comprising

an output configured to output a reconstructed output datastream, and

a plurality of inputs, wherein

each of said inputs is configured to receive one of said sub-streams; and

an underlying network infrastructure, communicatively coupled to said first and said second sub-stream management devices, and comprising said channels.

29. (Previously Presented) The apparatus of claim 28, further comprising
a first protocol processor, coupled to said input;
a second protocol processor, coupled to said output; and
wherein,

the first and second protocol processors each comprise a protocol stack.

30. (Previously Presented) An apparatus for transporting information over a network comprising:

a first sub-stream management device, comprising

an output configured to output a reconstructed output datastream, and

a plurality of inputs, wherein

each of said inputs is configured to receive one of a plurality of sub-streams,

said sub-streams are created by decomposing an input datastream of a plurality of input datastreams into said sub-streams, wherein

said decomposing comprises placing a portion of the input datastream into one of a plurality of queues,

forming the portion of the input datastream using one or more payload data units (PDUs) each comprising a predetermined amount of data,

forming each PDU by selecting the predetermined amount of data from the input datastream,

appending to each PDU a source identifier identifying the source of the input datastream, and

each queue of the plurality of queues corresponds to a corresponding channel of a plurality of channels,

each of said sub-streams is transported over said network on the corresponding channels, wherein

said transporting comprises forming a data frame comprising one or more PDUs and the appended source identifier for each PDU and transmitting the data frame over the corresponding channel, and

a transmission rate of said input datastream is greater than a maximum transmission rate of any one of said channels.

31. (Original) The apparatus of claim 30, wherein
each of said channels is an optical channel.

32. (Previously Presented) The apparatus of claim 31, wherein
each of said optical channels corresponds to a wavelength.

33. (Previously Presented) The apparatus of claim 30, wherein
said each one of said sub-streams has a transmission rate that is equal to or less than a maximum transmission rate of said corresponding one of said channels.

34. (Previously Presented) The apparatus of claim 30, further comprising
a second sub-stream management device, comprising
an input configured to receive said input datastream, and
a plurality of outputs, wherein
each of said outputs is configured to output one of said sub-streams; and
an underlying network infrastructure, communicatively coupled to said first and said second sub-stream management devices, and comprising said channels.

35. (Previously Presented) The apparatus of claim 34, further comprising
a first protocol processor, coupled to said input;
a second protocol processor, coupled to said output; and
wherein,
the first and second protocol processors each comprise a protocol stack.

36. (Previously Presented) The method of Claim 1 wherein selecting the selected one of a plurality of channels comprises:
using a simple round-robin technique to choose an available one of the plurality of channels.

37. (Previously Presented) The apparatus of Claim 24 wherein selecting the selected one of the plurality of outputs comprises:

using a simple round-robin technique to choose an available one of the plurality of outputs.

EVIDENCE APPENDIX

None

RELATED PROCEEDINGS APPENDIX

None